

Error rates associated with estimating distance

Results of a Field Survey Training Course



By Kevin Hannah
Alaska Bird Observatory
Fairbanks, Alaska

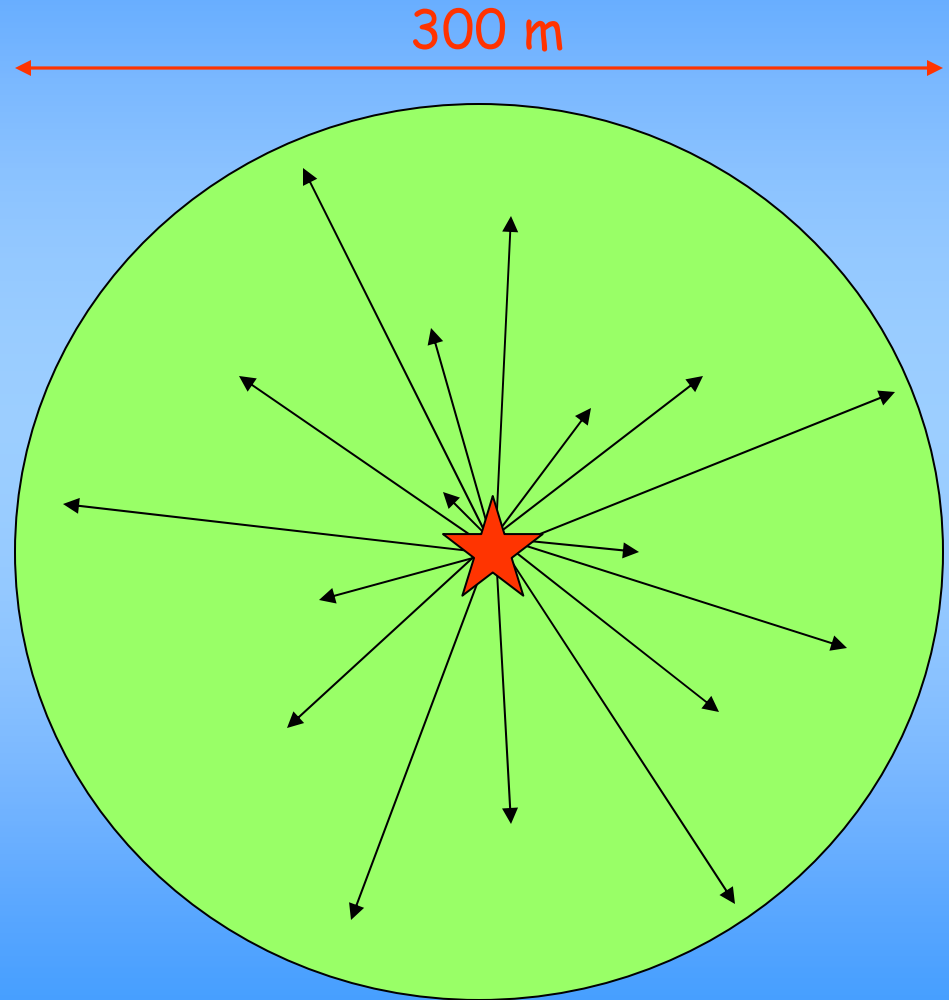
Training Program

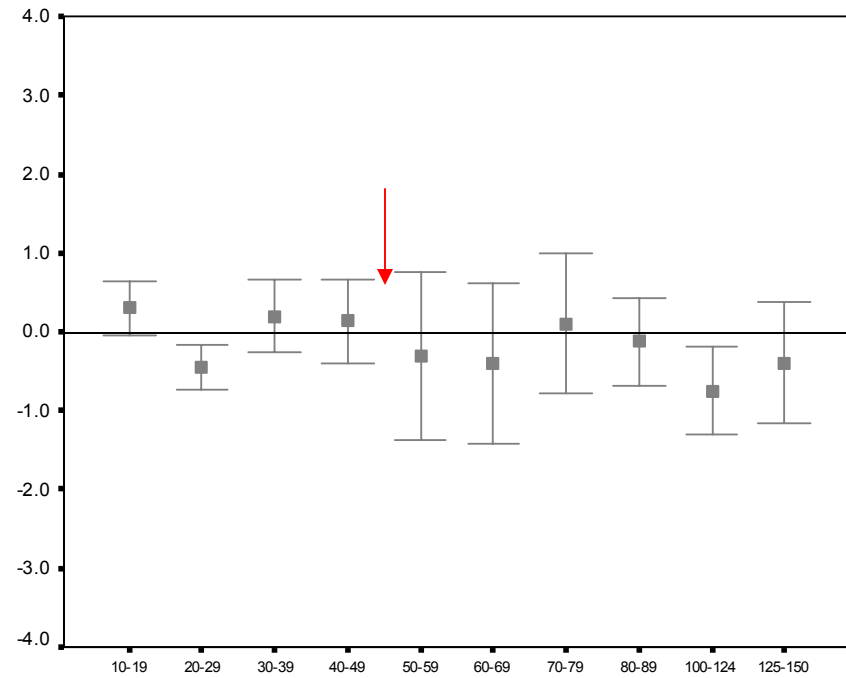
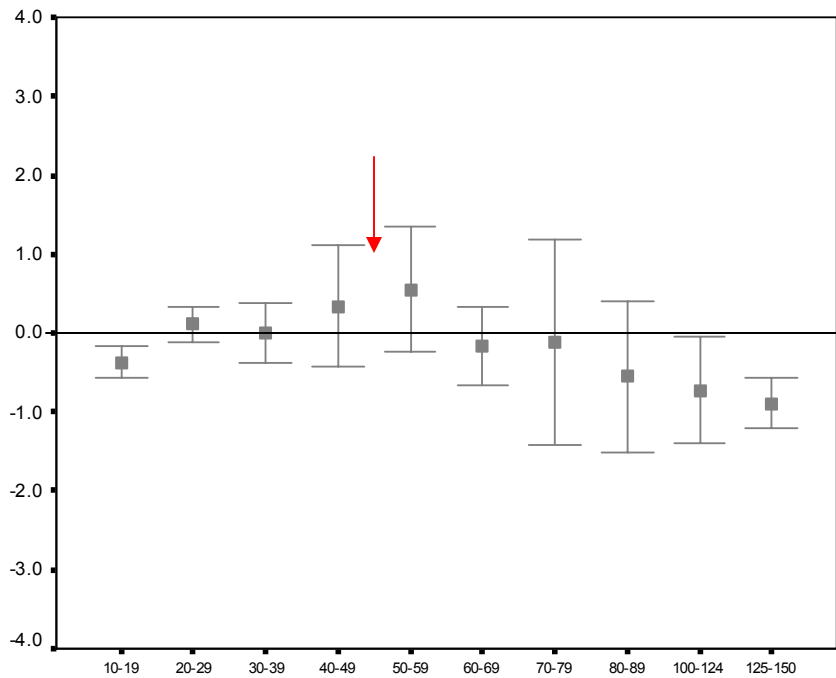
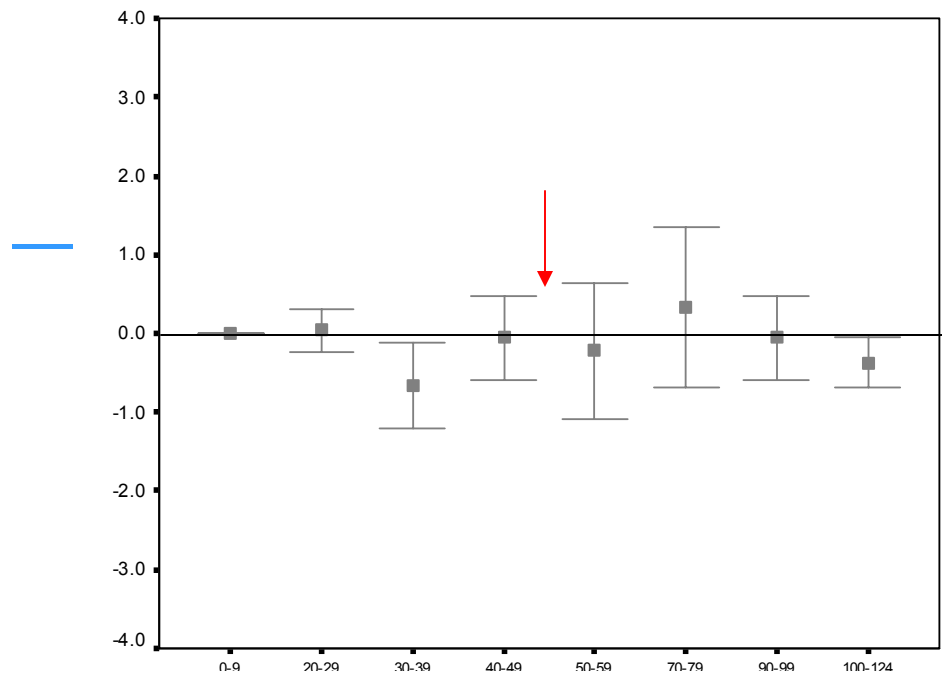
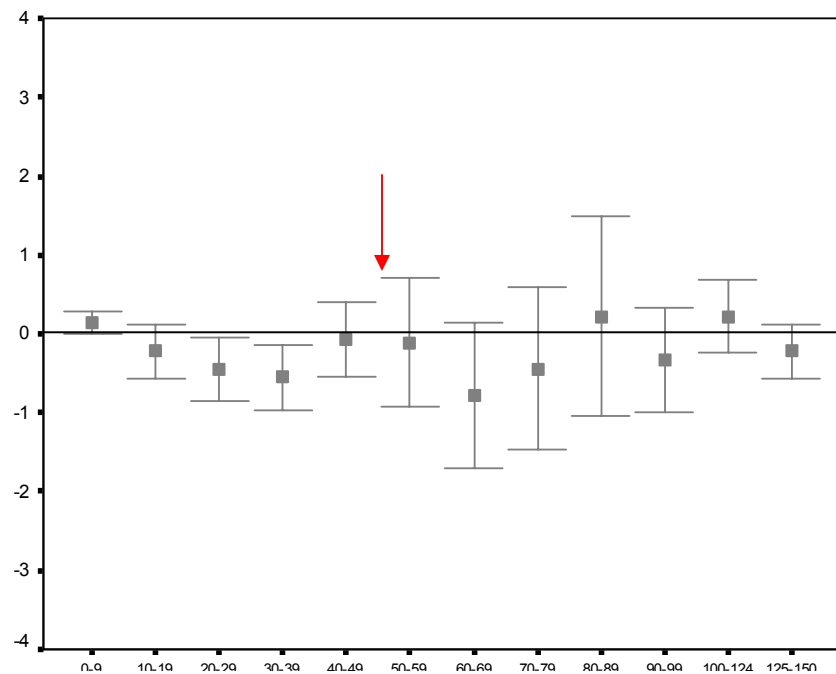
- Identification training
- Overview of methods and sampling techniques
- Conduct sample surveys in most representative habitats in interior AK
- Distance estimation using rangefinders and training exercises

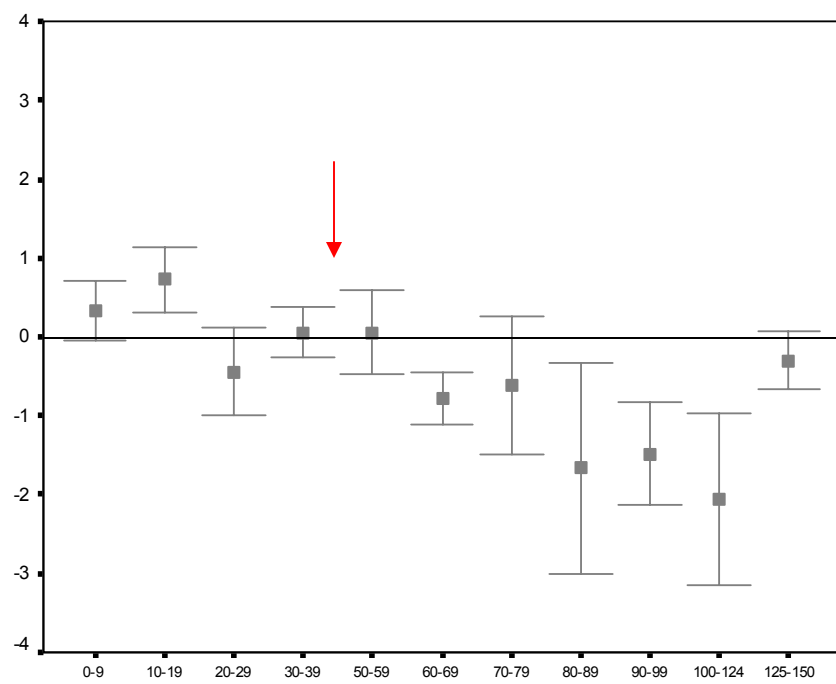


Distance Estimation Training Exercise

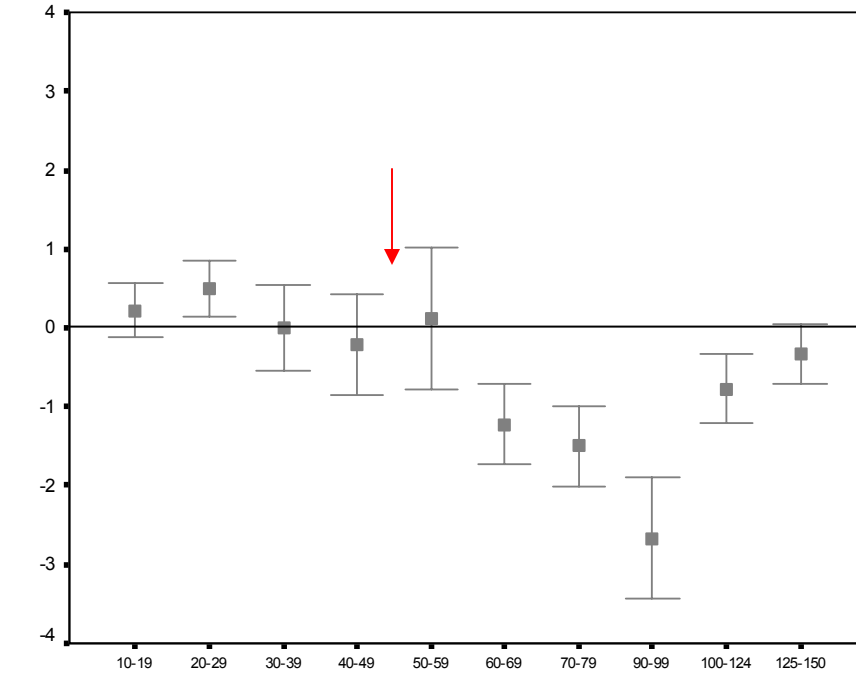
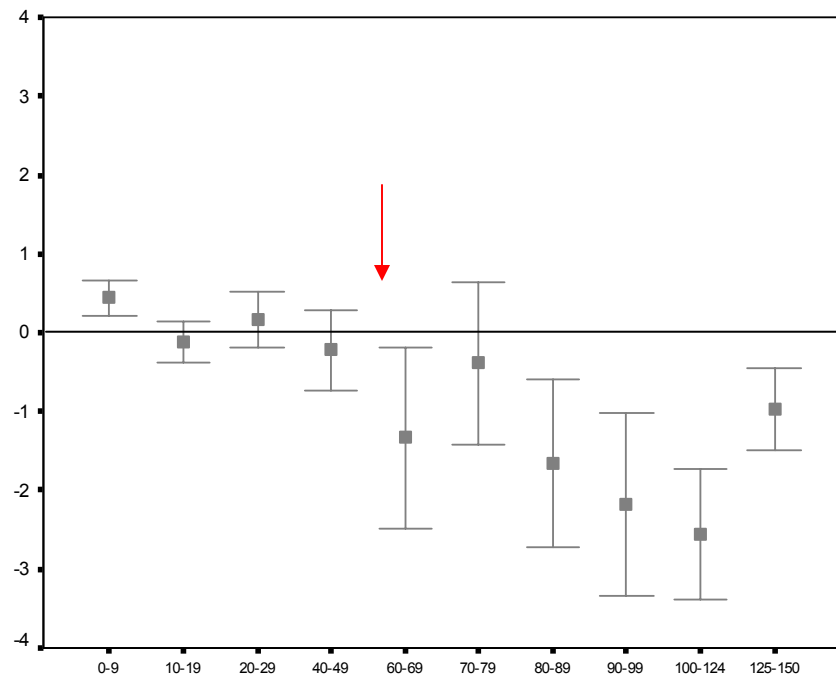
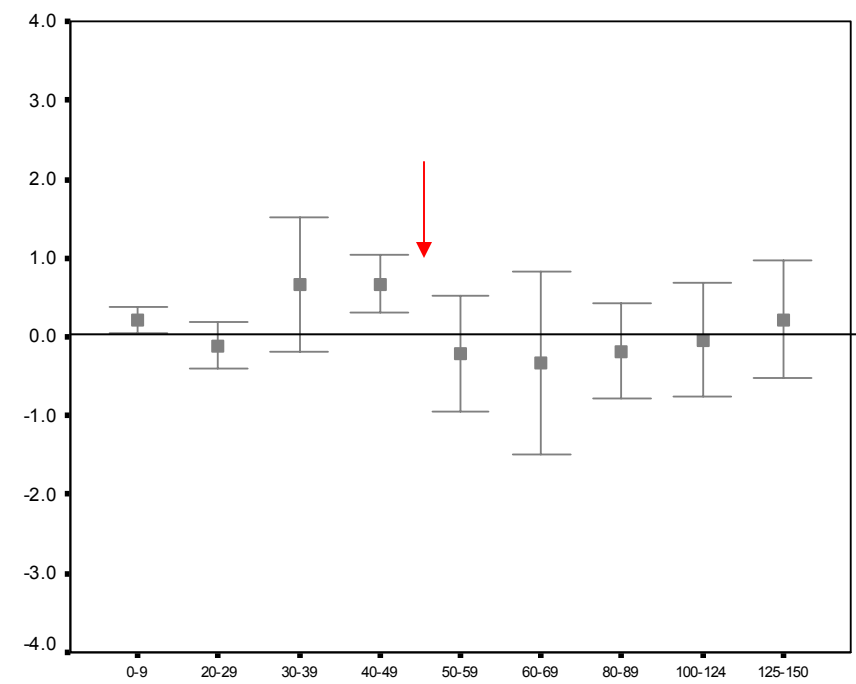
- 4 sample plots in each of field and forest
- Random number generator
- 20 sample distances from each plot
- Used 'boom-box' with Arctic Warbler song at constant volume
- ~ 3 day intervals







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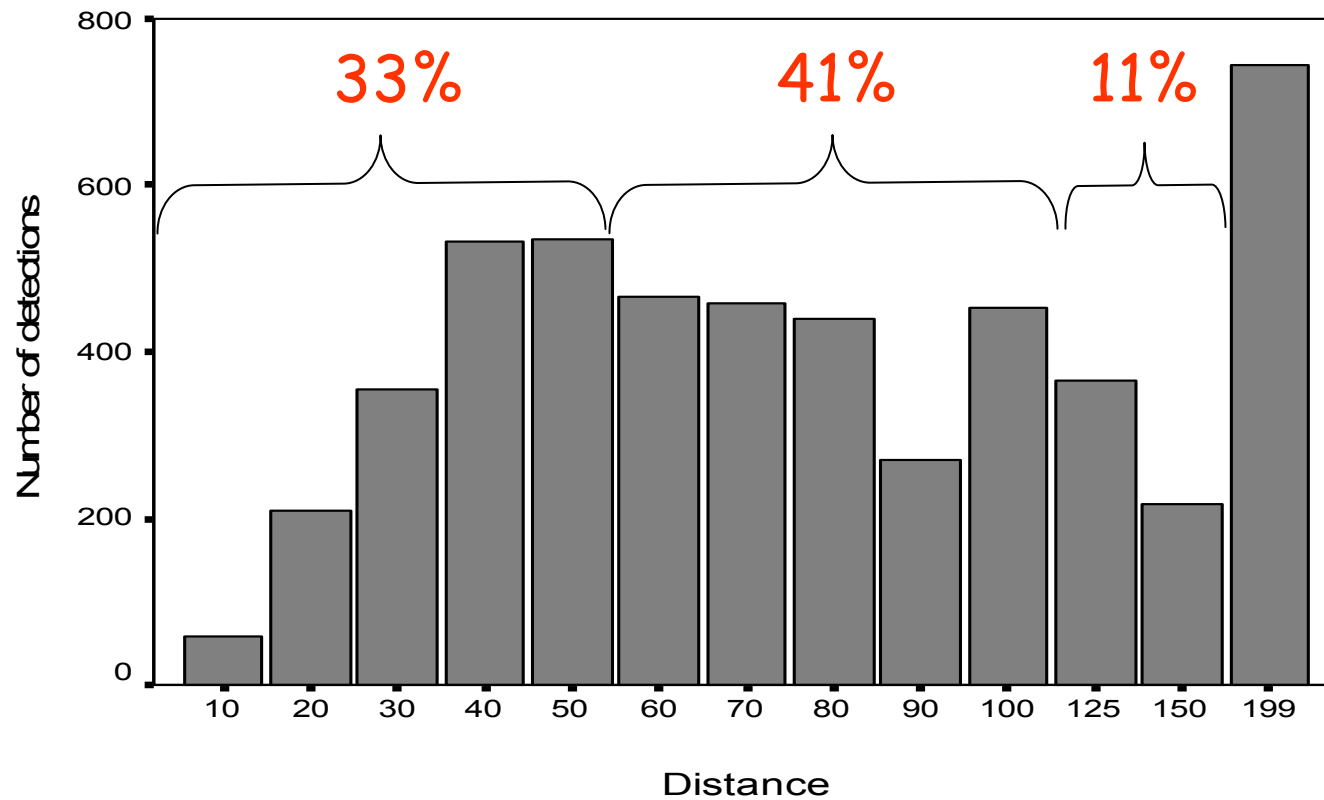
Result #1: potentially problematic?

- Since this is a training course, why are observers getting worse at estimating distance over time?

Result #2: potentially problematic?

- Error rates in forest plots potentially violate critical assumption of distance sampling
“all distances are measured accurately, or are correctly counted in the proper distance category when grouping distances” Buckland et al. 1993
- May be problematic if study design is random and not stratified by habitat (even open:closed) especially in patchy/variable habitat

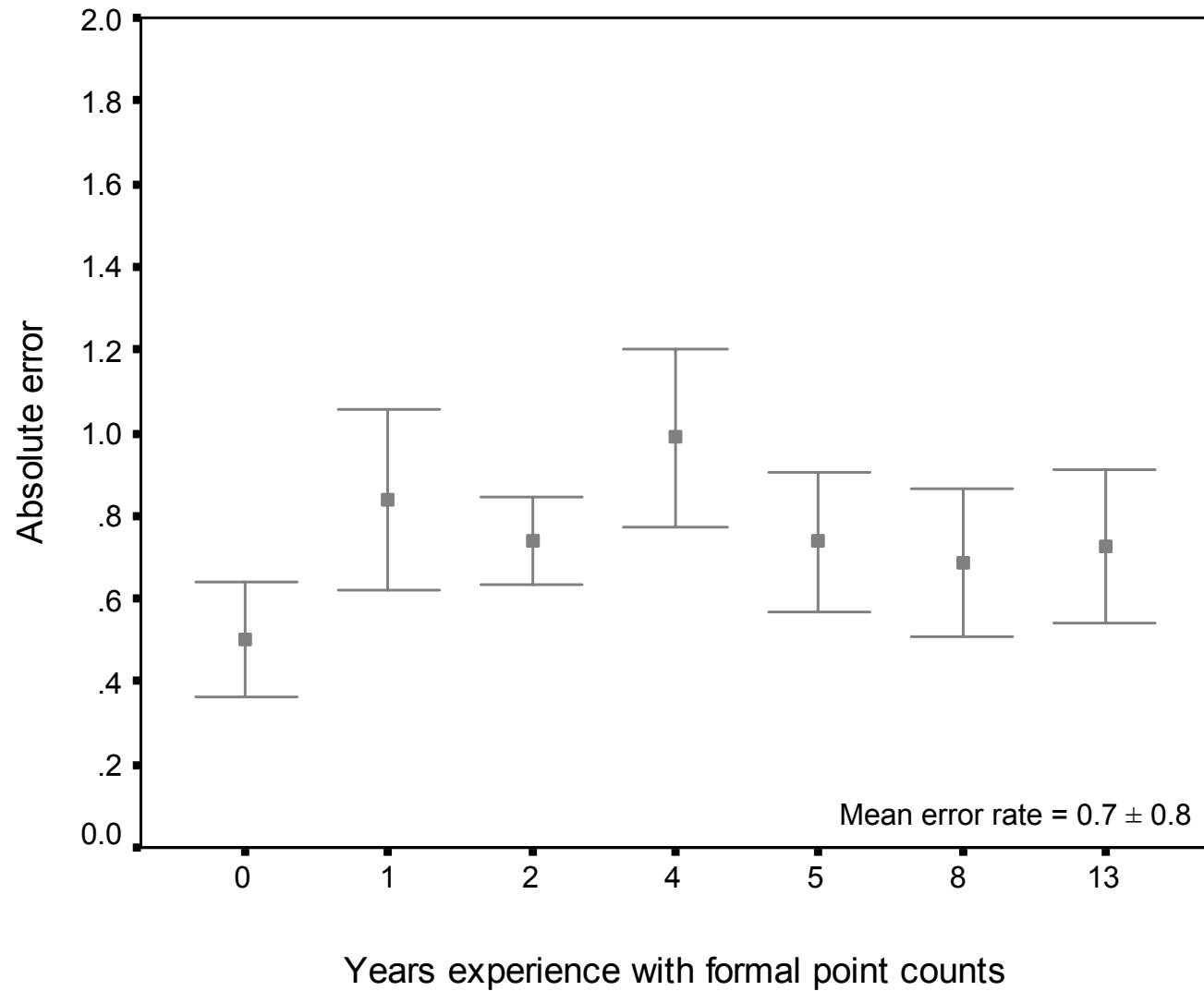
Detection distances (real data)



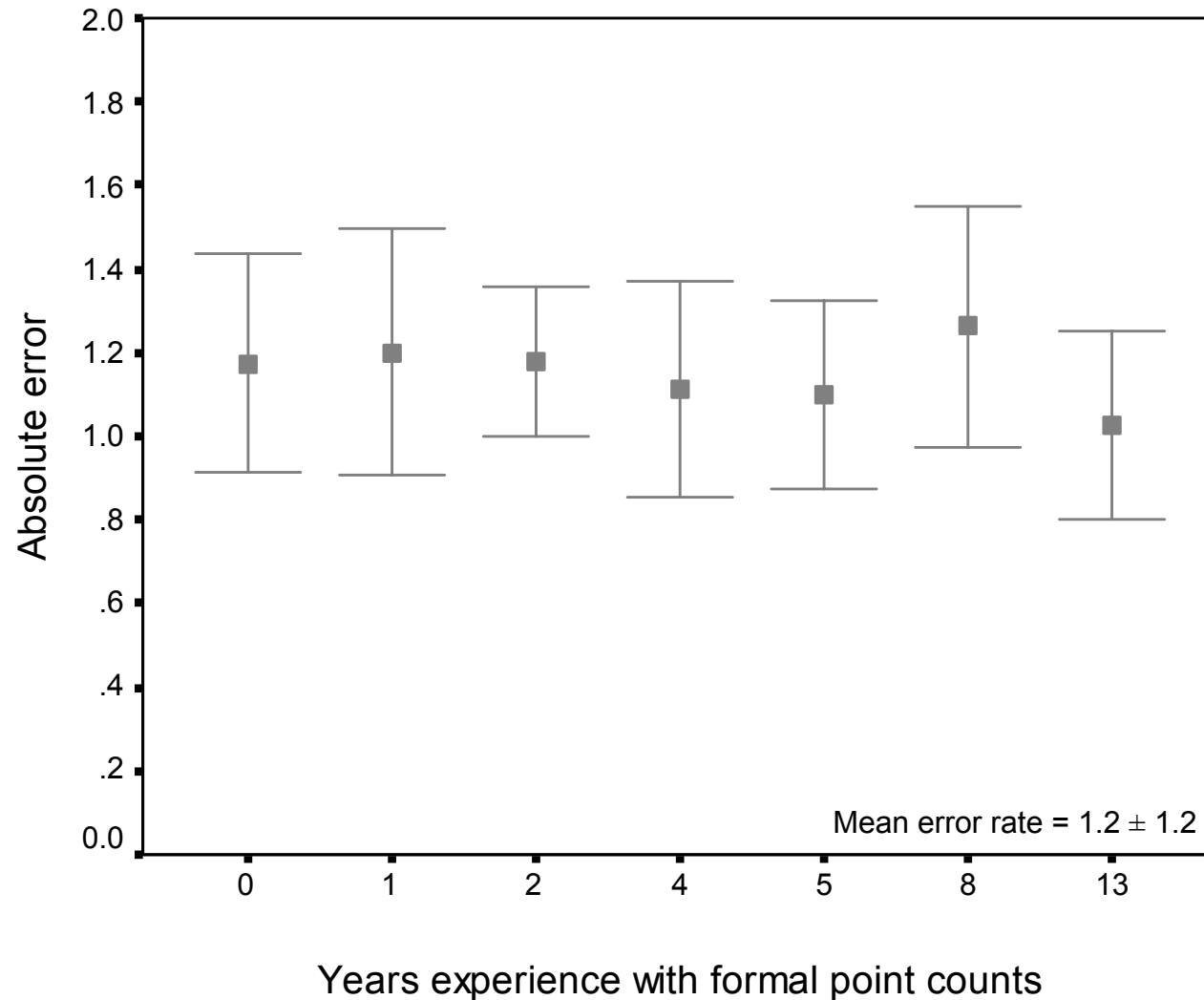
Result #3: potentially problematic?

- Greatest error rates may coincide with peak bird abundance interval
- Majority of data (>40%) may be most suspect

Observer variation - Field



Observer variation - Forest



Observer variation

- Mean error rate ~1 distance category
- Among observer variation wrt distance estimation may be minimal
- Familiarity with point count census techniques did not reduce error rate
- Perhaps this error rate is the inherent variation that we must accept

Course Future?

- Still vitally important to re-familiarize or re-calibrate oneself each year
- Accurately estimating distance is only one component of training course
- Perhaps conduct training exercise more frequently and at beginning
- Start to test improvement in distance estimation rates over longer timeframe

Acknowledgements

- Carol McIntyre - NPS Denali
- Tim Walker, Kristen Rozell - Alaska Bird Observatory
- 2003 Training Course participants